

11. (New) A method for the mitigation of pet malodor(s) on surfaces comprising contacting said malodor(s) with an aqueous liquid deodorizing composition, wherein the malodor(s) are from ammonia formation due to decomposition of urea present in animal waste, and wherein the composition comprises about at least 0.01% to about 10% of an dialkali metal tetraborate n-hydrate (with n being an integer from 0 to 10), 0.1-3% water soluble/dispersible polymer, 1-25% water soluble/dispersible volatile solvent, at least 75% water.
12. (New) The method of claim 11 wherein said composition further comprises at least one aesthetic and/or functional additive.
13. (New) The method of claim 11 wherein said dialkali metal tetraborate n-hydrate is selected from the group consisting of borax pentahydrate and borax decahydrate.
14. (New) The method of claim 11 wherein said polymer is selected from the group consisting of water soluble to dispersible polymers having a molecular weight of below about 2,000,000 daltons.
15. (New) The method of claim 11 wherein said solvent is selected from C₁₋₆ alkanols and C₁₋₂₄ glycol ethers.

In the Drawings:

Please replace the present drawings with the formal drawings submitted herewith.

Remarks

This is in response to the Office Action mailed December 8, 2000, for which a three-month extension of time has been requested in Paper No. 7, which accompanies this amendment. A copy of Roychowdury, U.S. Patent 4,816,220, is also attached. Its relevance will be made clear further below.

The present invention relates to a method and product for mitigating pet malodors, particularly those that arise from feline urine. These malodors are formed from ammonia formation due to decomposition of urea present in animal waste, and are entrapped in a minute, transparent residue or film of a composition comprising dialkali metal tetraborate

n-hydrate, water soluble/dispersible polymer, water soluble/dispersible volatile solvent, and water.

Claim 1 has been amended to include the restriction that the composition entraps the malodor(s) in a minute, transparent residue or film. Claims 6 and 7 have been amended to include the restriction that the composition is capable of forming a minute, transparent residue or film capable of entrapping malodor(s). Support for these restrictions are found in the specification on page 18, lines 2-4.

The claims 8 through 15 have been added. Claims 8 through 10 have the added restriction that the malodor(s) are from ammonia formation due to decomposition of urea present in animal waste. Support for this restriction is found in the specification on page 3, lines 22-37. Further support for claims 11 through 15 is found in original claims 1 through 5.

Claim Rejection – 35 USC 102(b)

Claim 6 stands rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 5,516,830 to Nachtman et al. The Examiner has stated that:

Nachtman et al. disclose a sprayable composition and a method of protecting material with the composition. More specifically, Nachtman et al. teach a sprayable composition comprising 0.06-0.59% water soluble cellulosic polymer, and 23-95% water, as well as other ingredients (c5, claim 1). Further, Nachtman et al. teach the sprayable composition can further comprise a surfactant, borax, and an odor controlling agent (c5, claims 2, 5, and 7). Nachtman et al. also teach that the composition also contains carrier solvents, such as alcohols (c4, l 38-39). Therefore, the composition disclosed by Nachtman et al. teaches a composition which can comprise a water soluble polymer, borax, a surfactant, water, carrier solvents, and additives, thereby anticipating the limitations of applicant's product claim.

According to its background of the invention, the Nachtman et al. patent “relates to a sprayable composition comprising a water-soluble polymer and clay, and to a method of

spraying the composition for covering a material to be protected such as soil, refuse at a disposal site, or other material in a stockpile to form a protective water-resistant layer thereover.” The clay is an essential element of the Nachtman et al. invention. (See the Abstract; column 1, lines 16-21; column 1, lines 51-64; column 3, lines 25-37; column 4, lines 42-49; and claim 1.) All of the examples show the presence of clay.

The presence of clay in the composition, and the optional inclusion of fibrous material and gypsum, would cause the cover layer to be opaque. Opacity is not a disadvantage for a protective water-resistant layer used to cover a material in a stockpile. On the other hand, opacity is a distinct disadvantage for a product used for the mitigation of pet malodor. These products are often used in a home environment, often these are soft surfaces, such as fabrics and carpets (see page 5, lines 33-34), where an opaque layer would be unsightly and discolor the surface. Claim 6 has been amended to include the restriction that the composition is capable of forming a minute, transparent residue or film capable of entrapping malodor(s).

Another major difference between the product of Nachtman et al. and the product of the present invention is the purpose for those products. The purpose of the Nachtman et al. product is for covering a material to be protected such as soil, refuse at a disposal site, or other material in a stockpile. The purpose of the product of the present invention is mitigating pet malodors, predominately those caused by ammonia formation due to decomposition of urea present in animal waste.

The only discussion of odors in Nachtman et al. is the discussion found at:

- Column 1, line 47, which states the composition preferably has the advantage that it “reduces volatile emissions and controls odor.”
- Column 2, lines 11-14, which states the composition can contain “an odor control agent.”
- Column 4, lines 22-34, which states the composition can contain “an odor control agent,” preferably CleanSense described in US 4,816,220 to Roychowdhury (copy attached). According to Roychowdhury:

- “This invention relates to a deodorant composition for abating the odor of organic refuse. More specifically, this invention relates to a deodorant composition which can be sprayed on garbage and like organic refuse to control the odor thereof.” (column 1, lines 5-9).
- “The active deodorizing agents used in the compositions of the invention are selected from the group consisting of eucalyptus oil, lemon grass oil, and juniper berry oil.” (column 2, lines 33-37).
- “The art has heretofore failed to eliminate the odor of landfills without disadvantageously reducing the level of microbial activity. Nontoxic masking agents have heretofore been used but have not proven to be satisfactory for the purpose.” (column 3, lines
- “An effective, strong, inexpensive, nontoxic masking agent has now been discovered. When applied in spray form, it completely deodorizes the landfill without any adverse effect either to the landfill, the microbial action taking place therein, the ground water, or the environment.” (column 3, lines 51-56).
- Claim 7, which states the composition, as defined in claim 1, further includes an odor control agent.

Although nothing in Nachtman et al. directly discusses the type of odors controlled, the statement of its intended use as “a cover layer over material such as soil, refuse at a dump site, or grain in a stockpile” would teach away from its use in controlling pet malodors. Another indication of the type of odor controlled is the discussion in Roychowdhury, which was incorporated by reference to describe CleanSense. It focuses on the odor of organic refuse. There is no discussion in Nachtman et al. or Roychowdhury about ammonia formation or its inhibition.

Nachtman et al. teaches away from the present invention mitigating malodors insofar as it teaches the necessity of adding a separate odor control agent, such as CleanSense. According to Roychowdhury, CleanSense uses eucalyptus oil, lemon grass oil, and juniper berry oil, instead of borax and polymer, to control odor. Therefore, there is no

teaching in Nachtman et al. that a composition similar to the present claimed invention is capable of forming a minute, transparent residue or film capable of entrapping malodors.

New claim 9, which is dependent upon amended claim 6, includes the restriction that the composition is capable of forming a minute, transparent residue or film capable of entrapping malodor(s) from ammonia formation due to decomposition of urea present in animal waste. Nothing in Nachtman et al. would teach this capability.

For the above reasons amended claim 6 and new claim 9 are not anticipated by the Nachtman et al. reference.

Claim Rejection – 35 USC 103(a)
Nachtman et al.

Claims 1 through 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nachtman et al. The Examiner has stated that:

Nachtman et al. is discussed above as teaching a composition which reads on applicant's claimed product. Further, as also discussed above, Nachtman et al. teach the inclusion of an odor controlling agent, suggesting that one of ordinary skill in the area would use the composition to control odor, thereby suggesting applicant's method claims. Additionally, although it is not explicitly stated in the reference, it is the position of the examiner that applicant's claim 7, to a container comprising the composition, is also rendered obvious by Nachtman et al.. Nachtman et al. teach that their composition is sprayable, thereby suggesting that it be held in a container which will allow for spraying. One of ordinary skill in the art would have been motivated to use the composition disclosed by Nachtman et al. in order to control odor, specifically because they teach in column 1, line 47, that their composition can control odor. The source of the odor is irrelevant. The expected result would be a protective composition which controls odor. Therefore, this invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

As discussed above, there are two major differences between the product of Nachtman et al. and the product of the present invention: (1) Nachtman et al.'s method forms a

protective layer containing clay, which would inherently be at least partly opaque, while our invention forms a minute, transparent residue or film, and (2) Nachtman et al.'s method would not be beneficial in mitigating pet malodors caused by ammonia formation.

The Applicants respectfully traverse the examiner's comment that "The source of the odor is irrelevant." On the contrary, it is very relevant because the chemistry of microbial action in the organic refuse is so radically different from that of ammonia formation from animal waste. As discussed in page 3 of the present specification, ammonia formation may be affected by urease inhibition or bacterial inhibition. Neither types of inhibition is taught by Nachtman or Roychowdhury. On the contrary, Roychowdhury directly teaches away from bacterial inhibition at column 1, lines 46-50. Thus, there would be no reason expect that the protective composition of Nachtman et al. would be useful for mitigating pet malodors.

For the above reasons, claims 1 through 7 and new claims 8 through 15 are not made unpatentable by the Nachtman et al. reference.

Claim Rejection – 35 USC 103(a)
Stanislowski et al.

Claims 1 through 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 5,183,655 to Stanislowski et al. The Examiner has stated that:

Stanislowski et al. teach an odor controlling animal litter comprising particles and an odor controlling liquid dispersion to be carried onto the litter particles (c 1, line 63- c 2, line 2). In column 6, example 1, Stanislowski et al. teach that the odor controlling liquid dispersion comprises water, boric acid, as well as surfactants and other additives. Additionally, Stanislowski et al. teach that certain polymers can be added, which are super-absorbent polymers to help wick away odors (c 5, l 61-63). Specifically, in claims 1 and 2, Stanislowski et al. teach that the liquid composition for deodorizing animal waste by direct contact therewith comprises a borate based compound, water, solvent, and surfactant. It is the position of the examiner that the teachings of Stanislowski et al. suggest the limitations of applicant's claims. Although, the purpose of Stanislowski et

al. 's invention is to coat litter particles, the liquid dispersion is claimed as a liquid composition for deodorizing animal waste. It is the position of the examiner that one of ordinary skill in the art would have been motivated to use Stanislawski et al. 's composition as a composition to control pet malodors, based on the disclosure. The expected result would be a composition which controls pet odors, especially those associated with pet waste. Therefore, this invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Stanislawski et al. teaches an animal litter at least a portion of which has been contacted with an antimicrobially-effective amount of pine oil combined with an effective amount of boric acid, or a boron-containing material having an equivalent boron level. It also teaches an aqueous dispersion of a mixture of an ammonia-controlling-effective amount of pine oil and boric acid or its equivalent. It does not teach entrapping malodors in a minute, transparent residue or film of a composition comprising dialkali metal tetraborate n-hydrate, water soluble/dispersible polymer, water soluble/dispersible volatile solvent, and water.

It is important to note that although Stanislawski et al. discloses polymers, those are *super-absorbent* polymers. Clearly these polymers would not be water-soluble because they absorb water instead of being dissolved in it.

Also, it is important to note those super-absorbent polymers are in the animal litter, along with porous clays and other opaque materials. Therefore, there is no reason to believe that the animal litter is capable of entrapping malodors in a minute, transparent residue or film.

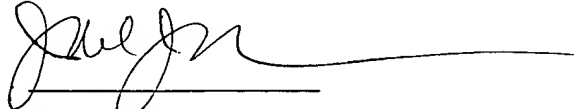
As for Stanislawski et al.'s aqueous dispersion of a mixture of an ammonia-controlling-effective amount of pine oil and boric acid or its equivalent, it does not contain any polymer, and there is no indication that it is capable of entrapping malodors in a minute, transparent residue or film.

As for the methods disclosed in Stanislawski et al., they do not teach using an aqueous liquid deodorizing composition that contains soluble/dispersible polymer. Nor do they teach entrapping malodors in a minute, transparent residue or film.

For the above reasons, claims 1 through 7 and new claims 8 through 15 are not made unpatentable by the Stanislawski et al. reference.

The above is a complete response to the Office Action. We respectfully request reconsideration of the rejection and early favorable action.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Joel J. Hayashida', with a long horizontal line extending to the right.

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June 8, 2001

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APPENDIX I – MARKED UP COPY OF AMENDED CLAIMS

1. (Amended) A method for the mitigation of pet malodor(s) on surfaces comprising contacting said malodor(s) with an aqueous liquid deodorizing composition to entrap said malodor(s) in a minute, transparent residue or film, the composition containing about at least 0.01% to about 10% of an dialkali metal tetraborate n-hydrate (with n being an integer from 0 to 10), 0.1-3% water soluble/dispersible polymer, 1-25% water soluble/dispersible volatile solvent, at least 75% water.
6. (Amended) A product for mitigating or eliminating pet malodor(s) on surfaces to which the malodors have been applied, the product comprising: an aqueous liquid deodorizing composition, the composition containing about at least 0.01% to about 10% of an dialkali metal tetraborate n-hydrate (with n being an integer from 0 to 10), 0.1-3% water soluble/dispersible polymer, 1-25% water soluble/dispersible volatile solvent, at least 75% water, wherein said composition is capable of fomring a minute, transparent residue or film capable of entrapping malodor(s).
7. (Amended) A container for dosing a liquid malodor counteractant on pet malodor(s) for the mitigation or elimination thereof, said liquid malodor counteractant comprising: an aqueous liquid deodorizing composition containing about at least 0.01% to about 10% of an dialkali metal tetraborate n-hydrate (with n being an integer from 0 to 10), 0.1-3% water soluble/dispersible polymer, 1-25% water soluble/dispersible volatile solvent, at least 75% water, wherein said composition is capable of forming a minute, transparent residue or film capable of entrapping malodor(s).